



# FR301 THRU FR307, BY396 THRU BY399

## 3.0 AMPS. FAST RECOVERY RECTIFIERS



### FEATURES

- \* Low forward voltage drop
- \* High current capability
- \* High reliability
- \* High surge current capability

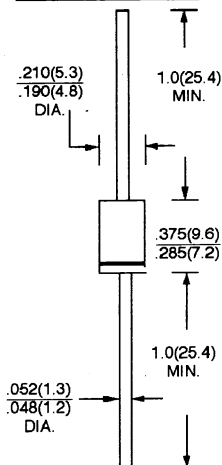
### MECHANICAL DATA

- \* Case: Molded plastic
- \* Epoxy: UL 94V-0 rate flame retardant
- \* Lead: Axial leads, solderable per MIL-STD-202, method 208 guaranteed
- \* Polarity: Color band denotes cathode end
- \* Mounting Position: Any
- \* Weight: 1.18 grams

### VOLTAGE RANGE

50 to 1000 Volts  
CURRENT  
3.0 Amperes

### DO-201AD



Dimensions in inches and (millimeters)

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

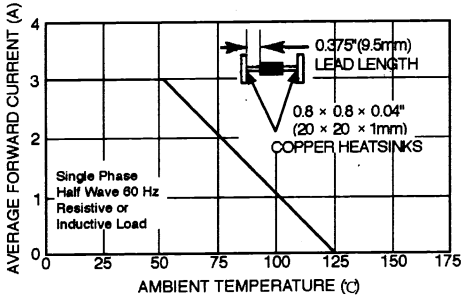
Rating at 25°C ambient temperature unless otherwise specified.  
Single phase, half wave, 60 Hz, resistive or inductive load.  
For capacitive load, derate current by 20%

TYPE NUMBER	SYMBOLS	FR301	FR302	FR303	FR304	FR305	FR306	FR307	UNITS
			BY396	BY397	BY398		BY399		
Maximum Recurrent Peak Reverse Voltage	$V_{RRM}$	50	100	200	400	600	800	1000	V
Maximum RMS Voltage	$V_{RMS}$	35	70	140	280	420	560	700	V
Maximum D. C Blocking Voltage	$V_{DC}$	50	100	200	400	600	800	1000	V
Maximum Average Forward Rectified Current .375" (9.5mm) lead length @ $T_A = 55^\circ C$	$I_{F(AV)}$	3.0							A
Peak Forward Surge Current, 8.3 ms single half sine-wave superimposed on rated load (JEDEC method)	$I_{FSM}$	150							A
Maximum Instantaneous Forward Voltage at 3.0A	$V_F$	1.3							V
Maximum D. C Reverse Current @ $T_A = 25^\circ C$ at Rated D. C Blocking Voltage @ $T_A = 100^\circ C$	$I_R$	10.0 150							$\mu A$ $\mu A$
Maximum Reverse Recovery Time (Note 1)	$T_{RR}$	150			250		500		nS
Typical Junction Capacitance (Note 2)	$C_J$	60							pF
Operating Temperature Range	$T_J$	- 65 to + 125							°C
Storage Temperature Range	$T_{STG}$	- 65 to + 150							°C

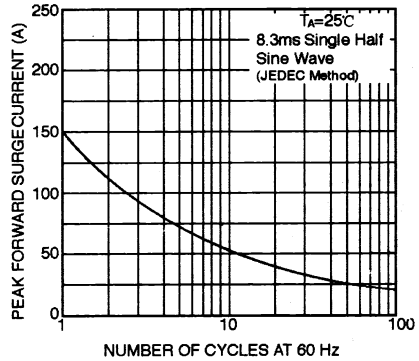
NOTES: 1. Reverse Recovery Test Conditions:  $I_F = 0.5A$ ,  $I_R = 1.0A$ ,  $I_{RR} = 0.25A$ .  
2. Measured at 1 MHz and applied reverse voltage of 4.0V D. C.

# RATINGS AND CHARACTERISTIC CURVES (FR301 THRU FR307, BY396 THRU BY399)

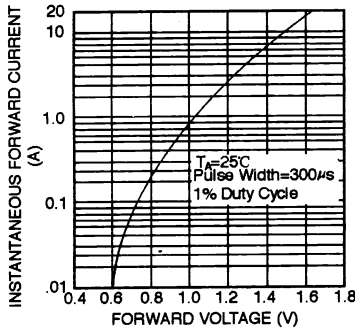
**FIG. 1 - TYPICAL FORWARD CURRENT DERATING CURVE**



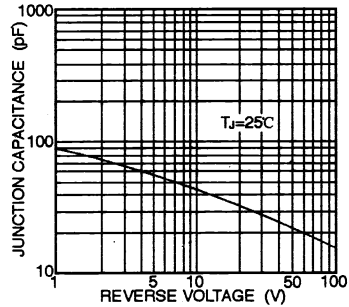
**FIG. 2 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT**



**FIG. 3 - TYPICAL FORWARD CHARACTERISTICS**



**FIG. 4 - TYPICAL JUNCTION CAPACITANCE**



**FIG. 5 - TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTICS**

